

Date: Wednesday, 25/06/2008 10:17:29 AM
 User: Julie Lecocq

Process Sheet

Customer :	CU-DAR001 Dart Helicopters Services	Drawing Name :	0H-58 SKIDTUBE ASSEMBLY
Job Number :	40077		
Estimate Number :	10475		
P.O. Number :		Part Number :	D058672041
This Issue :	25/06/2008	S.O. No. :	
Prsht Rev. :	NC	Drawing Number :	D2922 REV A1
First Issue :	1/1	Project Number :	N/A
Previous Run :	37714A	Drawing Revision :	A1
Written By :		Material :	
Checked & Approved By :	JL008.6.25	Due Date :	02/07/2008
Comment :	Est Rev:C 02.06.28 Re-format; ECN 258 KJ Est Rev:D 06.02.06 Added Dt8025 EC	Qty:	1 Um: Each

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
----------------	------------------------------	----------------------

1.0	DC	DOCUMENT CONTROL
-----	----	------------------



SLD 08.6.26

**Comment:** DOCUMENT CONTROL

Photocopy bluefile & type labels per PPP D058-672-041 CHG 001

508/09/08

2.0	D2620	Skidtube, 206 Skidtube
-----	-------	------------------------

**Comment:** Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
1	D2620	Bent Tube 3" OD	39178 SLD-6-25

3.0	SKIDTUBES 1	SKIDTUBESS RESOURCE 1
-----	-------------	-----------------------

**Comment:** LANDING GEAR RESOURCE 1

1-Deburr Fwd edge of tube

SLD-6-25

2-Weld D2794 cap as per QSI 004 and Dwg D2922. Use aluminum rod.

A/R Aluminum Rod

M107877 BE 8-6-25

3-Cut aft end of D2620 bent tube as per dwg D2922

4-Drill pilot holes using drill jig DT8480 and DT8025 open to 0.312" dia.

5-Drill holes for wearplates using DT 8487 Open to 0.297" dia.

6-Open holes for aft cap and tow ring as per Dwg D2922.

SLD-6-25

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Wednesday, 25/06/2008 10:17:29 AM
User: Julie Lecocq

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: OH-58 SKIDTUBE ASSEMBLY

Job Number: 40077

Part Number: D058672041

Job Number:



Seq. #:

Machine Or Operation:

Description :

8-Remove inner indexing ridge on aft end of skidtubes as per Dwg D2922

9-Deburr and Blow out all chips from inside the tube

SL 8-6-25

4.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

08/06/25 (70)

5.0

QC9

VISUAL WELDING INSPECTION



Comment: VISUAL WELDING INSPECTION

08-06-25 (1)

6.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

SL 8-6-25

7.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

08/06/25

8.0

D2923

Step, OH58 Skidtube



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Pick:

Qty Part Number Description Batch

1 D2923 Web B 40079

08/06/25

9.0

SKIDTUBES 1

SKIDTUBESS RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Open holes to finished size as per Dwg D2922(without cutting fluid)

2-Countersink crossbolt spacer holes as per Dwg D2922(without cutting fluid)

3-Deburr and Blow out all chips from inside the tube

4-Bond D2923 web in place as per QSI 015. Ensure holes lineup

A/R Sikaflex-291

Sikaflex expire date: 08-11-1

107878

SL 8-6-25

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Wednesday, 25/06/2008 10:17:29 AM
User: Julie Lecocq

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 0H-58 SKIDTUBE ASSEMBLY

Job Number: 40077

Part Number: D058672041

Job Number:



Seq. #:

Machine Or Operation:

Description :

10.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

08/06/26 @

11.0

D2794

Forward Cap



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Qty

Part Number

Description

Batch

1 D2794

Fwd Cap

B14588 BE 8-6-26

12.0

D2649

Cross Bolt Spacer



Comment: Qty.: 22.0000 Each(s)/Unit Total: 22.0000 Each(s)

Pick:

Qty Part Number

Description

Batch

22 D2649

Crossbolt spacer

B37859 BE 8-6-26

13.0

SKIDTUBES 1

SKIDTUBESS RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Weld D2649 cross bolt spacers as per QSI 004 and Dwg D2922.(Remember to back drill each hole to 0.250" before welding the other side)

A/R Aluminum Rod

m107877 BE 8-6-26

3-Grind welds flush as per Dwg D2922

4-Counterbore 5/16" x 0.750" deep as per Dwg D2922

55626

14.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

08/06/26 @

15.0

QC10

VISUAL INSPECTION OF GROUND WELDS



Comment: VISUAL INSPECTION OF GROUND WELDS

08/06/26 @

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Wednesday, 25/06/2008 10:17:29 AM
User: Julie Lecocq

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 0H-58 SKIDTUBE ASSEMBLY

Job Number: 40077

Part Number: D058672041

Job Number:



Seq. #:

Machine Or Operation:

Description :

16.0

POWDER COATING

POWDER COATING



M107928



Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.1) as per QSI 005 4.3

Pressure wash m. h. 08/07/02 (12)

START TIME: 9:30

OVEN TEMPERATURE: 320

FINISH TIME: 10:00

BL / RB 08/07/02

17.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

FE 08/07/04 (1)

18.0

D26483

Wearpad



Comment: Qty.: 5.0000 Each(s)/Unit Total: 5.0000 Each(s)

Pick:

Qty Part Number Description

5 D2648-3 Wearpad

Batch

B34591

RD / FE

19.0

D265615

Wearshoe



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Pick:

Qty Part Number Description

1 D2656-15 Wearshoe

Batch

B34596

RD / FE

20.0

D265621

Wearplate



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Pick:

Qty Part Number Description

1 D2656-21 Wearshoe

Batch

B37101

RD / FE

21.0

D2924

Wearshoe



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Pick:

Qty Part Number Description

1 D2924 Wearshoe

Batch

B35368

RD / FE 08/07/07

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Wednesday, 25/06/2008 10:17:29 AM
User: Julie.Lecocq

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 0H-58 SKIDTUBE ASSEMBLY

Job Number: 40077

Part Number: D058672041

Job Number:



Seq. #:

Machine Or Operation:

Description :

22.0

MS27039108

Screw



Comment: Qty.: 50.0000 Each(s)/Unit Total : 50.0000 Each(s)

Pick:

Qty Part Number Description Batch
50 MS27039-1-08 Screw 33 m108077

21/FL

23.0

AN960JD10L

Washer



Comment: Qty.: 50.0000 Each(s)/Unit Total : 50.0000 Each(s)

Pick:

Qty Part Number Description Batch
50 AN960JD10L Washer m10485

21/FL

24.0

ALS41032130

Insert



Comment: Qty.: 50.0000 Each(s)/Unit Total : 50.0000 Each(s)

Pick:

Qty Part Number Description Batch
50 ALS4-1032-130 Insert m105819
or (see QSI 017)

21/FL

25.0

D26511

Plug



Comment: Qty.: 20.0000 Each(s)/Unit Total : 20.0000 Each(s)

Pick:

Qty Part Number Description Batch
20 D2651-1 Plugs 038273

21/FL

26.0

D26513

O-Ring



Comment: Qty.: 20.0000 Each(s)/Unit Total : 20.0000 Each(s)

Pick:

Qty Part Number Description Batch
20 D2651-3 O-Rings 038242

21/FL 08/07/07

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Wednesday, 25/06/2008 10:17:30 AM
User: Julie Lecoq

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 0H-58 SKIDTUBE ASSEMBLY

Job Number: 40077

Part Number: D058672041

Job Number:



Seq. #:

Machine Or Operation:

Description :

27.0

D2646

Aft Cap



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty Part Number Description Batch

1 D2646 Aft Cap

B37235

RD/FL

28.0

MS27039108

Screw



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Pick:

Qty Part Number Description

2 MS27039-1-08 Screw

Batch

m9185

* RD/FL

29.0

AN960JD10L

Washer



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Pick:

Qty Part Number Description

2 AN960JD10L Washer

Batch

m104885

RD/FL

30.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

1-Install inserts & wearpads as per dwg D2922. Insert a drop of Sikaflex at insert hole before installing wearplates.

A/R Sikaflex-291

Sikaflex expire date: 08-11

m107888

2-Install O-Rings D2651-3 on plugs D2651-1 with Petroleum Jelly and install plugs as per Dwg D2922

3-Install D2646 Aft Cap and seal with Sikaflex adhesive. Clean excess adhesive

A/R Sikaflex-291

Sikaflex expire date: 08-11

m107888

3- Wing Walk as per Dwg D2922 and QSI 005 4.4

m108496

08/07/07

Batch:

①

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Wednesday, 25/06/2008 10:17:30 AM
User: Julie Lecocq

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: OH-58 SKIDTUBE ASSEMBLY

Job Number: 40077

Part Number: D058672041

Job Number:



Seq. #:

Machine Or Operation:

Description :

31.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

5 08/02/08 (20)

32.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

5 08/02/08 (20)

33.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: *C*

Pc 8/7/8 (1)

34.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

08/07/10 77

Job Completion



umf 08-07-08

400 77

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



DESIGN RF	DRAWN BY RF	DART AEROSPACE USA, INC. BELLEVUE, WA	
CHECKED [Signature]	APPROVED [Signature]	DRAWING NO. D2922	REV. A SHEET 1 OF 2
DATE 99.10.14		TITLE OH-58 SKIDTUBE ASSEMBLY	SCALE NTS
A	99.10.14	NEW ISSUE	
A1	# CP 01.08.20	Ø0.640 WAS Ø0.625	

RELEASED
00.05.11 #

Qty	Part Number	Description
X	D2922-041	SKIDTUBE ASSEMBLY
*	D2600-1	EXTRUSION
1	D2646	AFT CAP.
4	D2648-3	WEARPAD
1	D2648-5	WEARPAD
22	D2649	CROSS BOLT SPACER
20	D2651-1	PLUG
20	D2651-3	O-RING
1	D2656-15	WEARSHOE
1	D2656-21	WEARSHOE
1	D2794	CAP
1	D2923	WEB
1	D2924	WEARSHOE
50	AKS7-1032-130 or AKS4-1032-130 or ALS7-1032-130 or ALS4-1032-130	INSERT
52	AN960JD10L	WASHER
52	MS27039-1-08	SCREW

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 40077

GENERAL NOTES:

- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 2) LENGTH OF D2600-1 EXTRUSION REQUIRED BEFORE BENDING = 160 INCHES.*
- 3) INSERT D2923 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241/291 ADHESIVE PER DART QSI 015 AFTER BENDING.
- 4) USE DART DRILL TEMPLATE DT8406 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARSHOE INSERTS. INSTALL AKS7-1032-130 PER SECTION D-D (50 PLACES) AFTER FINISH. INSTALL MS27039-1-08 SCREWS AND AN960JD10L WASHERS IN ALL INSERTS. SEAL WITH SIKAFLEX-241/291.
- 5) WELDING TO BE DONE PER DART QSI 004.
- 6) FINISH:
ACID ETCH, ALODINE PER DART QSI 005 4.1 PRIOR TO INSERTING D2923 WEB
POWDER COAT ASSEMBLY GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED TO 0.50 ABOVE LOCATION RIDGE PER DART QSI 005 4.4
- 7) INSERT D2651-1 PLUG C/W D2651-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (20 PLACES).

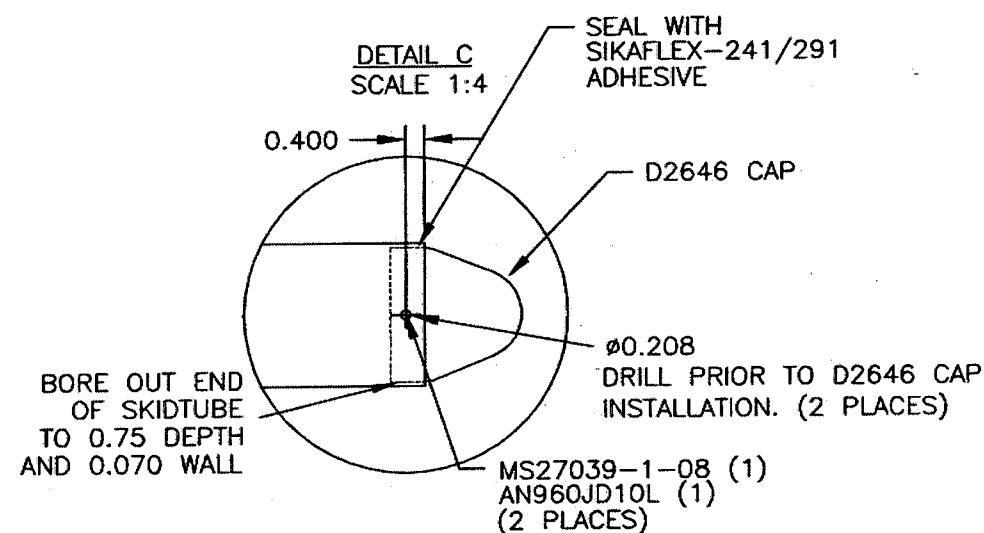
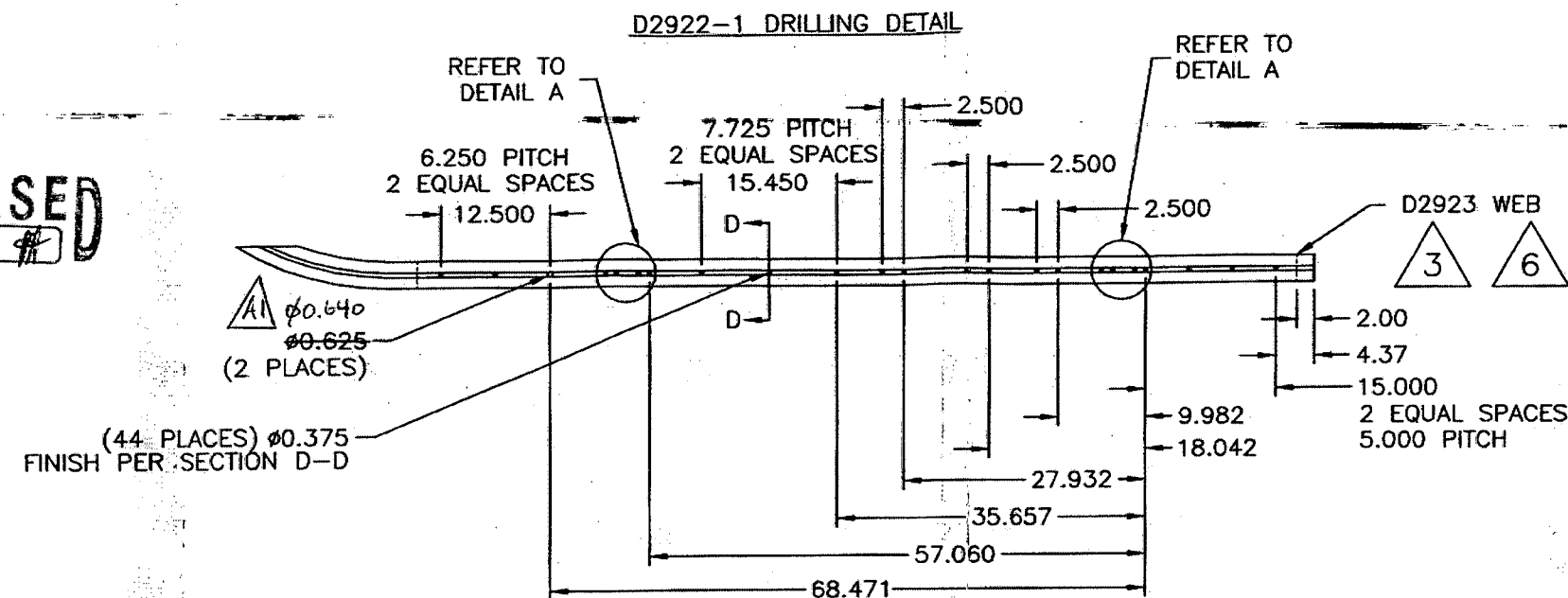
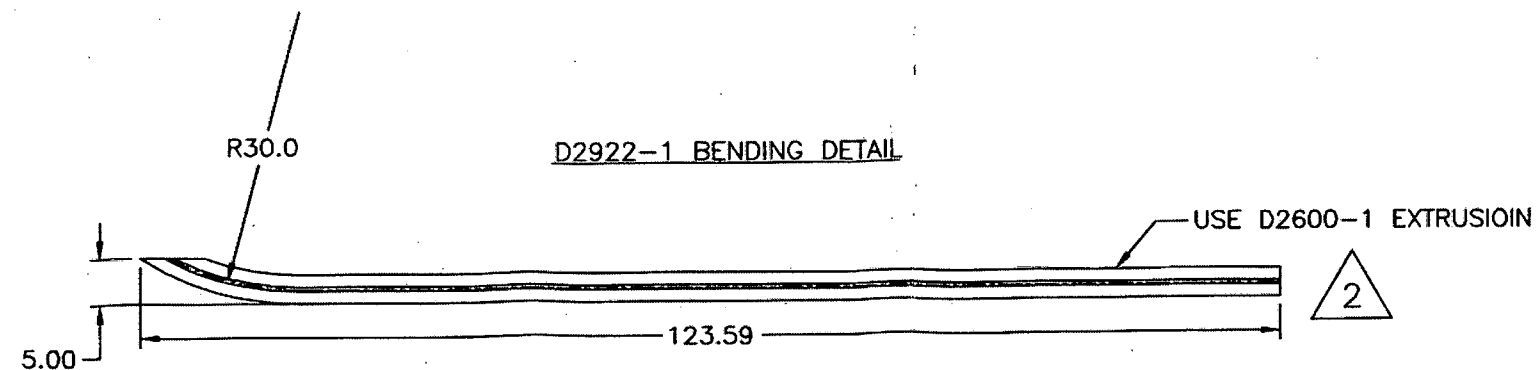
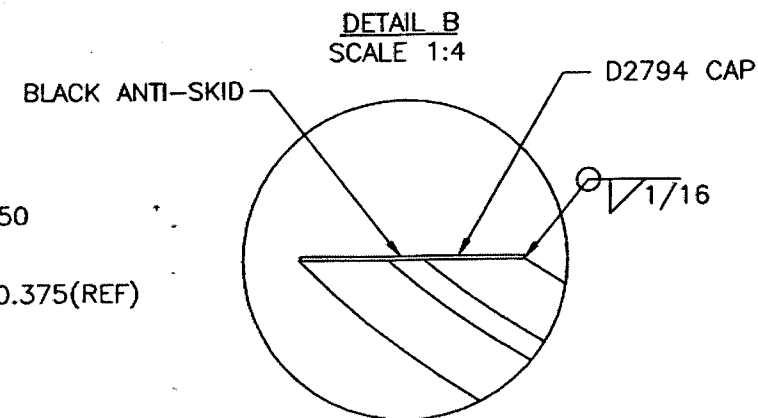
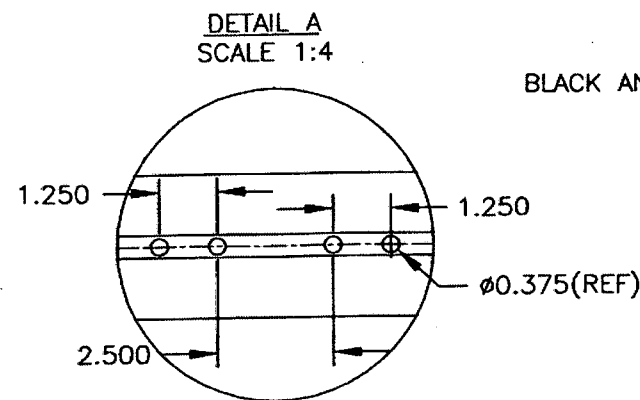
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

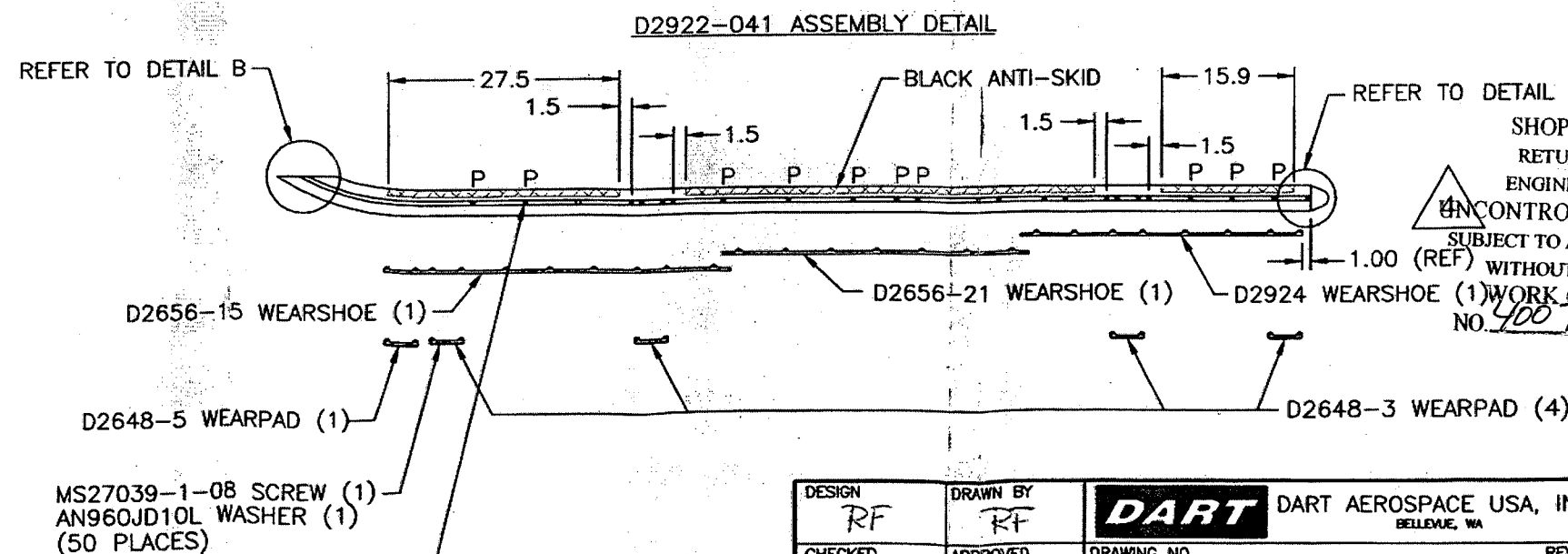
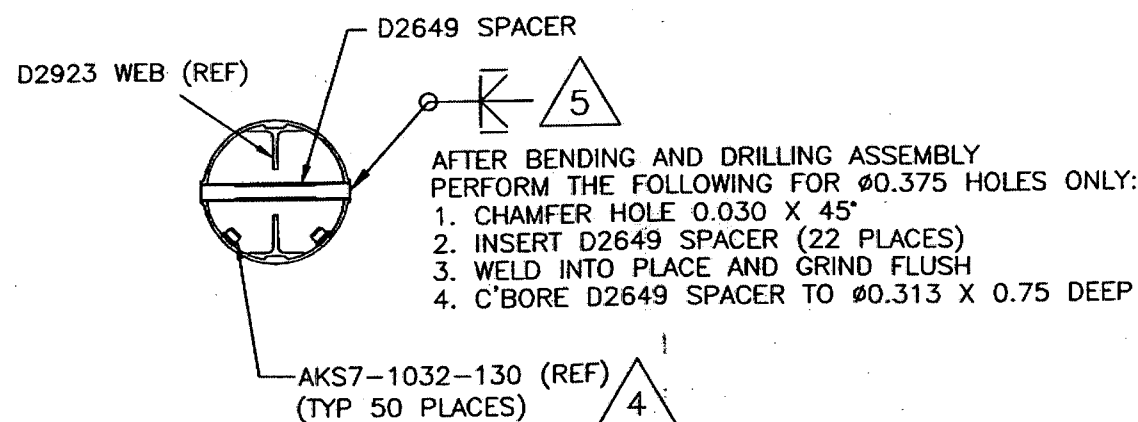
QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



SECTION D-D
SCALE 1:4
FOR 0.375 HOLES ONLY



DESIGN RF	DRAWN BY RF	DART DART AEROSPACE USA, INC. BELLEVUE, WA	
CHECKED [Signature]	APPROVED [Signature]	DRAWING NO. D2922	REV. A SHEET 2 OF 2
DATE 99.10.14	TITLE OH-58 SKIDTUBE ASSEMBLY	SCALE 1:20	

RELEASED
00.05.11

NO. 160

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliot
Job number: 39844A
Part number: Dock #12 441
Description: acc skid
Welding Process: Tig ☒ Mig ☐
Base material: Aluminium
Current: AC ☒ DC ☐

TEST REQUIREMENTS AND RESULTS

Visual: pass ☒ fail ☐
Penetration: pass ☒ fail ☐

UNACCEPTABLE

Cracks: pass ☒ fail ☐
Undercut: pass ☒ fail ☐
Pin holes: pass ☒ fail ☐
Overlap (cold lap): pass ☒ fail ☐
Porosity (surface): pass ☒ fail ☐
Coloration: pass ☒ fail ☐

Qualifier Pat. Dineel Date of Test Coupon 08-06-23
Welder Barclay Elliot Date of Test Coupon 08-06-23

The above named individual is qualified in accordance with AWS D17.1.2001 to weld